REMARKS

Reconsideration and allowance of the subject application in view of the foregoing amendments and the following remarks is respectfully requested.

By this Amendment, claims 1 and 6 are amended. Claims 1-3 and 6-7 remain pending.

Rejections under 35 U.S.C. §102(b)

Claim 1, 6, and 7 stand rejected under 35 U.S.C. §102(b) over *Liu* (US 6,639,671). In response, claims 1 and 6 are amended. Applicant respectfully submits that claims 1, 6, and 7 are believed to be patentable over the applied art for the reasons discussed below.

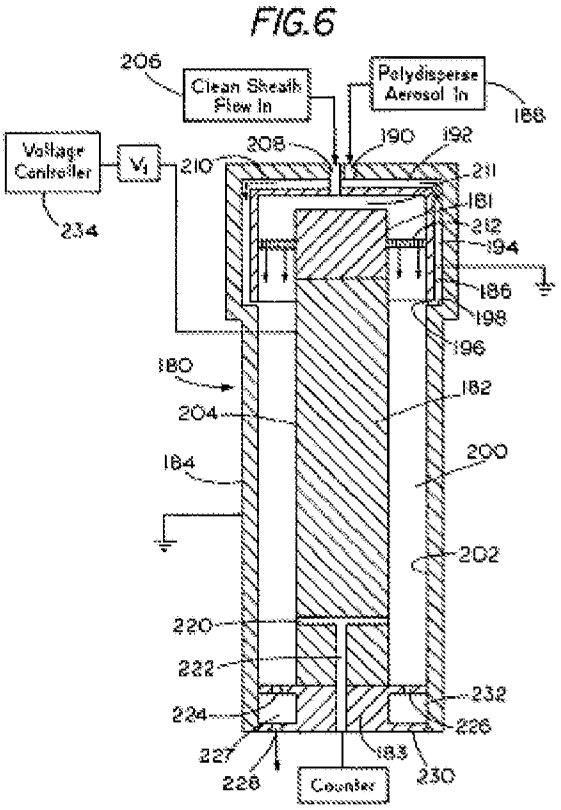
As amended, claim 1 recites, inter alia, an apparatus for measuring a number of particles, comprising an electrode and a particle separating means,

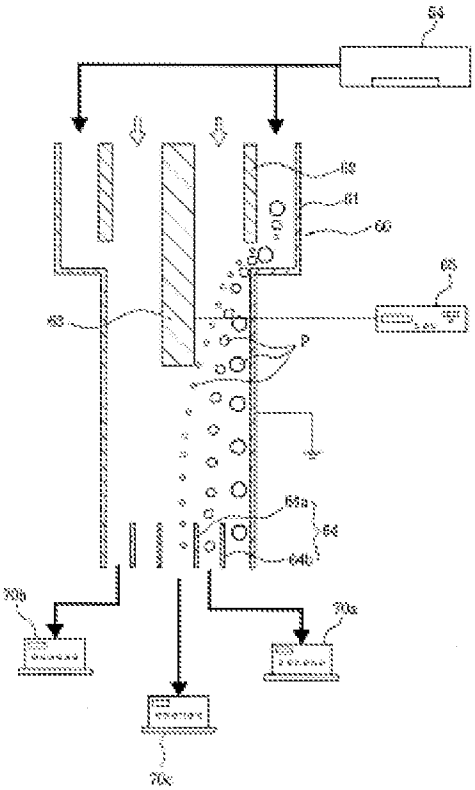
> wherein an empty space is formed between the lower end of the electrode and an upper end of the particle separating ducts and the particle separating means separates the charged particles according to size when the charged particles flow down in the empty space.... (Emphasis added).

A rejection based on 35 U.S.C. §102 requires every element of the claim to be included in the reference, either directly or inherently. Applicant respectfully submits that *Liu* fails to disclose at least the above recited element of amended claim 1.

Specifically, when comparing Applicant's Fig. 3 with Fig 6 of *Liu*, as viewed below, Applicant's disclosed embodiments are distinguished from *Liu*, at least based upon the recited empty space between the lower end of the electrode 63 and the upper end of the particle separating ducts 64, wherein the charged particles are separated according to the size while the charged particles flow down in the empty space.

Applicant's Fig. 3





As disclosed in the specification of the present invention at paragraph [0026] lines 13-17 of the published application (US 2007/0194775A1), "the electrode 63 is spaced apart by predetermined distance, for example, about 1 to 5cm, from an upper end of the particle separating ducts 64a and 64b in order for the particles to be separated according to size and flow out." (Emphasis added). Applicant's Figs. 2 and 3 clearly depict an empty space between the lower end of the electrode 63 and the upper end of the particle separating ducts 64.

The particles are sorted in the size of the particle by the electric field, and then the sorted particles are counted respectively when the charged particles flow down in the empty space without interference from electrode 63.

Thus, the claimed invention finds support in the application as filed. Amended claim 1 is also patentable over the art of record.

Claim 6 is amended to recite, inter alia, a method for measuring a number of particles

comprising:

> separating the charged particles, which are not attached to the electrode, according to size into a plurality of groups; and
>
> counting the number of charged particles of each group separated according to size. (Emphasis added).

Liu fails to disclose, teach, or suggest this feature, and on the other hand, specifically discloses wherein although the particles are separated in three groups, only one group is counted. A first group comprises the particles having smaller size than certain size predetermined by the electric field, and based upon their smaller size and higher mobility, are deposited on the outer surface 204 of cylinder 182 above the exit slit 220, (*see* column 10, lines 48-41). A second group comprises particle having larger size than a certain size predetermined by the electric field, and are carried with excess flow through flow distributing holes 224 and are exhausted through opening 228, (*see* column 10, lines 54-57). The third group comprises the particle having the size predetermined by the electric field and are deflected to the vicinity of slit 220 and are carried into the outlet passage 222, (*see* column 10, lines 61-64). Unlike Applicant's recited apparatus that counts all particles separated according to size by the particle separating means, *Liu* only discloses wherein only those particles carried in outlet passage 222 are counted by light-scattering droplet counter 14.

Accordingly, because *Liu* does not disclose, teach or suggest each and every feature recited in amended claims 1 and 6, the rejection of independent claims 1 and 6, and dependent claim 7 under 35 U.S.C. §102(b) is improper. Applicant respectfully submits, therefore, that independent claims 1, 6, and 7 are patentable over *Liu*.

Withdrawal of the §102(b) rejection over *Liu* is respectfully requested.

Rejections under 35 U.S.C. §103(a)

Claims 2 and 3 stand rejected under 35 U.S.C. §103(a) over *Liu*. Claims 2 and 3 depend from claim 1, which, as presented above, is allowable over *Liu*. Accordingly, claims 2 and 3 are likewise patentable over *Liu* at least in view of their dependence on claim 1, as well as for the

additional features they recite.

For example, claim 2 recites wherein the particle counting means includes "a plurality of particle counters connected to the respective particle separating ducts." The Office Action cites the MPEP, arguing that the "mere duplication of parts has no patentable significance unless a new and unexpected result is produced." Applicant respectfully submits that the plurality of counters, each counter connected to respective particle separating ducts does produce a new and unexpected result. Specifically, unlike *Liu* that appears to disclose a differential mobility analyzer 16 capable of counting a single group having a single particle size, Applicant claims an apparatus that is configured to count multiple groups of different sized particles.

Accordingly, because claim 2 recites an unexpected result, claim 2 is patentably distinct from *Liu*.

Withdrawal of the §103(a) rejection is respectfully requested.

Conclusion

Entry of the amendments is proper under 37 CFR §1.116 since the amendments: (a) place the application in condition for allowance (for the reasons discussed herein); (b) do not raise any new issue requiring further search and/or consideration (since the amendments amplify issues previously discussed throughout prosecution); and (c) place the application in better form for appeal, should an appeal be necessary. The amendments are necessary and were not earlier presented because they are made in response to arguments raised in the final rejection. Entry of the amendments is thus respectfully requested.

All objections and rejections having been addressed, it is respectfully submitted that the present application should be in condition for allowance and a Notice to that effect is earnestly solicited. Early issuance of a Notice of Allowance is courteously solicited.

The Examiner is invited to telephone the undersigned, Applicant's attorney of record, to facilitate advancement of the present application.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 07-1337 and please credit any excess fees to such deposit account.

Respectfully submitted,

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